

UTAH CTE SKILL CERTIFICATION

ELECTRICIAN

STUDENT PERFORMANCE EVALUATION

TEST #514

Student Name: _____

The performance evaluation is a required component of the Skill Certification process. Each student **must be evaluated** on the required performance standards. Performance standards may be completed and **evaluated anytime during the course**.

- Students should be aware of their progress throughout the course, so that they can concentrate on the objectives that need improvement.
- Students should be encouraged to repeat the objectives until they have performed at a minimum of a number 1 or 2 on the rating scale (moderately to highly competent level).
1= highly competent Successfully demonstrated without supervision
2= moderately competent Successfully demonstrated with limited supervision
3= limited competence Demonstrated with close supervision
4= not competent Demonstration requires direct instruction and supervision
- When a standard has been achieved at a minimum of 80% (moderately to highly competent level). "Y" (Y=YES) is recorded on the last line of that standard, on the performance evaluation sheet. If a student does not achieve a 1 or a 2 (moderately to highly competent level), then "N" (N=NO) is recorded on the last line of that standard.
- All performance standards **MUST** be completed and evaluated prior to the written test.
- The **teacher** will bubble in "A" on the answer sheet for item #81 for students who have achieved "Y" on **ALL** performance standards.
- The **teacher** will bubble in "B" on the answer sheet for item #81 for students who have **ONE or more "N's"** on the performance standards.
- The signed performance evaluation sheet(s) **MUST** be kept in the teachers' file for two years.
- A copy is also kept on file with the school's CTE Skill Certification testing coordinator for two years.

Students who achieve a 1 or a 2 (moderately to highly competent) on ALL performance standards and 80% on the written test will be issued a CTE Skill Certificate.

460302-01 Students will be able to understand electrical safety

1	2	3	4
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Demonstrate safe working procedures in a construction environment.

Explain the purpose of OSHA and how it promotes safety on the job.

Identify electrical hazards and how to avoid or minimize them in the workplace.

Explain safety issues concerning lockout/tagout procedures, personal protection using assured grounding and isolation programs, confirm space entry and fall protection systems.

460302-02 Students will be able to understand hand bending

1	2	3	4
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Identify the methods of hand bending conduit.

Identify the various methods used to install conduit.

Use math formulas to determine conduit bends.

Mark 90° bends, back-to-back bends, offsets, kicks, and saddle bends using a hand bender.

460302-03 Students will be able to understand fasteners and anchors

1	2	3	4
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Identify and explain the use of anchors

Demonstrate the correct applications for fasteners and anchors

460302-04 Students will be able to understand electrical theory I

1	2	3	4
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Recognize what atoms are and how they are constructed.

Define voltage and identify the ways in which it can be produced.

Explain the difference between conductors and insulators.

Define the units of measurement that are used to measure the properties of electricity.

Explain how voltage, current, and resistance are related to each other.

Using the formula for Ohm's Law, calculate an unknown value.

Explain the different types of meters used to measure voltage, current, and resistance.

Using the power formula, calculate the amount of power used by a circuit.

460302-05 Students will be able to understand electrical theory II

1	2	3	4
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Explain the basic characteristics of a series circuit.

Explain the basic characteristics of a parallel circuit.

Explain the basic characteristics of a series-parallel circuit.

Calculate, using Kirchoff's Current Law, the total current in parallel and series-parallel circuits.

Find the total amount of resistance in a series circuit.

Find the total amount of resistance in a parallel circuit.

Find the total amount of resistance in a series-parallel circuit.

460302-06 Students will be able to understand electrical test equipment

1	2	3	4
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Explain the operation of and describe the following pieces of test equipment – Ammeter, voltmeter, Ohmmeter, Volt-ohm-millimeter VOM, continuity tester, voltage tester.

Explain how to read and convert from one scale to another using the above test equipment

Explain the importance of proper meter polarity

Explain the difference between digital and analog meters.

460302-07 Students will be able to understand Introduction to the National Electrical Code				1	2	3	4
	Explain the purpose and history of the National Electrical Code (NEC).						
	Describe the layout of the NEC.						
	Explain how to navigate the NEC.						
	Describe the purpose of the National Electrical Manufacturers' Association (NEMA) and the National Fire Protection Association (NFPA).						
	Explain the role of testing laboratories.						

460302-08 Students will be able to understand raceways, boxes and fittings				1	2	3	4
	Describe various types of cable trays and raceways.						
	Identify and select various types of sizes and raceways.						
	Identify and select various types of raceway fittings.						
	Identify various methods used to install raceways.						
	Demonstrate knowledge of NEC raceway requirements.						
	Describe procedures for installing raceways and boxes on masonry surfaces.						
	Describe procedures for installing raceways and boxes on concrete surfaces.						
	Describe procedures for installing raceways and boxes in a wood frame environment.						
	Describe procedures for installing raceways and boxes on drywall surfaces						
	Recognize safety precautions that must be followed when working with boxes and raceways.						

460302-09 Students will be able to understand conductors				1	2	3	4
	Explain the various sizes and gauges of wire in accordance with American Wire Gauge standards						
	Identify insulation and jacket types according to conditions and applications.						
	Describe voltage ratings of conductors and cables.						
	Read and identify markings on conductors and cables.						
	Use the tables in the NEC to determine the ampacity of a conductor.						
	State the purpose of stranded wire.						
	Describe the different materials from which conductors are made.						
	Describe the different types of conductor insulation.						
	Describe the color coding of insulation.						
	Describe the equipment required for pulling wire through conduit.						
	Describe the procedure for pulling wire through conduit.						
	Install conductors in conduit.						
	Pull conductors in a conduit system.						

460302-10 Student will be able to understand boxes and fittings.				1	2	3	4
	Describe the different types of nonmetallic and metallic boxes.						
	Understand the NEC requirements for box fill.						
	Calculate the required box size for any number and size of conductors.						
	Explain the NEC regulations for volume required per conductor in outlet boxes.						
	Properly locate, install, and support boxes of all types.						
	Understand the NEC requirements for boxes supporting lighting fixtures.						
	Install the different types of fittings used in conjunction with boxes.						
	Explain how boxes and fittings are selected and installed.						
	Describe the various types of box supports.						

The instructor must retain a copy of this Student Performance Evaluation for two years after the student has left the program.

Instructor Signature:Date:

Student Signature:Date:

School:
